GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

UNSTARRED QUESTION NO:4042
ANSWERED ON:06.08.2014
RESEARCH IN NUCLEAR SCIENCE
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Will the Minister of ATOMIC ENERGY be pleased to state:

(a) the steps taken by the Government during the last three years to boost research in nuclear science in the country;

(b) whether there is any proposal to set up research reactors in the near future and if so, the details thereof; and

(c) the details of the nuclear science research programmes proposed during the Twelfth Five Year Plan?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

(a) The Department of Atomic Energy (DAE) has been pursuing R&D in nuclear science, engineering and higher mathematics. The R&D activities are carried out through Research Centres, Aided Institutions under the administrative control of the Department and also through extra mural support through Board of Research in Nuclear Sciences (BRNS). The Department has formulated projects under the XII Five Year Plan with emphasis on Research in Nuclear Science. The outlay provided under XII Five Year Plan (2012-17) R&D Sector is 19878 crore. During the last three years, the Department has provided adequate financial support under R&D Sector as detailed below, for pursuing research in nuclear sciences:

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2011-12 : 2194.00 crore
2012-13 : 1879.07 crore
2013-14 : 2842.00 crore
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Some of the other important steps taken by the Department towards boosting the research in nuclear sciences and allied disciplines are:

(i) Strengthening of R&D infrastructure by way of new project activities for establishing new BARC campus at Vizag, Tata Institute of Fundamental Research (TIFR) Centre for Interdisciplinary Sciences (TCIS) at Hyderabad, International Centre for Theoretical Sciences (ICTS), Bengaluru.

(ii) Pursuing research in the Fast Breeder Reactor and fusion research programmes.

(iii) Participation of Indian scientists in international collaboration programmes such as Large Hadron Collider at CERN, International Thermo Nuclear Experimental Reactor (ITER) Project/Jules Horowitz Reactor Project (France) etc.

(iv) Strengthening of Human Resources and building expertise in the specialised areas of nuclear sciences through initiatives under Homi Bhabha National Institute (HBNI), a deemed University, setting up of National Institute of Science Education and Research (NISER), Establishing University of Mumbai-Department of Atomic Energy-Centre for Excellence in Basic Sciences (UM-DAE-CBS), collaborations of Research Centres /Aided Institutions of DAE with Universities in India and abroad;

(v) Setting up of Global Centre for Nuclear Energy Partnership (GCNEP) in Haryana.

(b) Yes, Sir. Two research reactors are proposed to be constructed at the new BARC Campus at Vizag. One of the research reactors will be similar to existing 100 MW Dhruva research reactor. The other research reactor will be a 30 MW reactor specifically designed to produce high specific activity radioisotopes.

(c) The Department has proposed a number of projects under R&D Sector in XII Five Year Plan. Some significant initiatives are listed in the table below:
Department of Atomic Energy − XII Plan Emphasis / Significant Initiatives

I. Flagship Programmes

1. High flux research reactor and Isotope processing laboratory

2. Research reactor similar to Dhruva

3. Peta Flop class Parallel Supercomputing facility

4. Sodium Technology Complex

5. Advanced National facility for Unstable and Rare Isotope Beams

6. India based Neutrino Observatory (INO)- a multi-institutional green field project of the Department of Atomic Energy to build a world class underground laboratory for research in high energy physics.

7. Enhancement of INDUS synchrotron user facility

8. Development of GCNEP - an initiative to enable India in establishing the leadership in the field of nuclear energy through research and training

9. TIFR Hyderabad Campus - special focus on science education at all levels

10. Establishment of cancer hospital and research centre at Vizag and Mohali, Punjab

II. Developing Human resources and fostering new opportunities in science education

1. Development of International Centre for Theoretical Sciences − TIFR Bengaluru